Nearshore Health and Non-Point Source Pollution

funded by the Great Lakes Restoration Initiative

The GLRI Action Plan calls for action to identify sources and reduce loadings of nutrients and soil erosion as well as improve public health protection at beaches. NOAA's projects listed below support efforts to improve nearshore areas and reduce nonpoint source pollution in the waters of the Great Lakes.

Assessment of Agricultural and Urban Watershed Phosphorus Loading Impacts on HAB Formation and Nearshore Water Quality

GLRI funds are supporting two projects that measure nutrient concentrations and water quality in the nearshore waters of western Lake Erie and Saginaw Bay, Lake Huron to continue to develop new and enhance existing decision support tools for environmental and public health officials. The projects provide critical in-lake water quality and toxicity observations as well as predictive models that forecast harmful algal bloom location and intensity. The goal of these projects is to understand nutrient transport and offer monitoring information on the formation, growth and toxicity of harmful algal blooms. Decision support tools produced by these efforts will help ensure decision makers have access to the information necessary to safeguard drinking water, alert water treatment plants of changes in water quality, and determine target nutrient loads in agricultural and urban watersheds.

Clean Marina - Stormwater

This project will contribute to implementation of coastal community stormwater management practices, and increase resiliency in the face of changing environmental conditions at marina facilities in the Great Lakes region. Michigan Sea Grant (MSG) will facilitate the implementation of on-the-ground Clean Marina certification efforts, and will also provide coordination and engagement of the Great Lakes Clean Marina Network. Additionally, MSG will oversee a small grants program to support regional Clean Marina certification processes, and enable promotional and recruitment efforts by program coordinators.

Applying Green Infrastructure in Waterfront Redevelopment

This project will provide support to two coastal communities, with the goal of integrating green infrastructure (GI) into their waterfront redevelopment efforts. This project will build upon work funded through the GLRI Economics of Green Infrastructure project, which evaluated the cost of flooding impacts in Duluth, MN, and Toledo, OH, and examined how these communities could use GI to help mitigate and adapt to flooding issues. This project aims to demonstrate how GI can be an important tool for addressing hazard and climate change impacts in the context of waterfront redevelopment.

Improving Coastal Health, Human Health, and Beach Forecasting

Residents and tourists alike are drawn to Great Lakes beaches, nearshore waters, and tributaries. Unfortunately, these waters and shorelines can experience unsafe levels of E. coli and growth of Harmful Algal Blooms (HABs), both of which can be detrimental to human health and frequently force closure of beaches. NOAA's Great Lakes Environmental Research Laboratory (GLERL) is working to address these problems. GLRI funds are helping to support GLERL's work to develop models that forecast the locations of HABs and E. coli concentrations, in turn giving resource managers the tools to make more timely actions to protect human health.

Implementation of Nutrient Reduction Projects in Agricultural Watersheds

NOAA is creating multi-agency partnerships with the Great Lakes states to implement Agricultural Nutrient Runoff Risk Advisory Forecast Services, using GLRI funding. The goal of the service is to implement a web-based decision support tool, driven by real-time modeling, which provides information to agricultural nutrient applicators up to ten days into the future. The desired outcome is for applicators to avoid spreading nutrients prior to forecasted hydrologic events such as rainfall and snow melt, where environmental models indicate runoff of the nutrients is likely.

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Great Lakes RESTORATION

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